

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 0 966 124 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
15.05.2002 Bulletin 2002/20

(51) Int Cl.7: **H04L 1/00**, H04L 1/06,  
H04L 1/04, H04B 7/02

(43) Date of publication A2:  
22.12.1999 Bulletin 1999/51

(21) Application number: **99111667.4**

(22) Date of filing: **16.06.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(72) Inventors:  
• **Abe, Katsuaki**  
Kawasaki-shi, Kanagawa 216-0015 (JP)  
• **Hasegawa, Makoto**  
Tokyo 157-0065 (JP)  
• **Yamamoto, Naoyuki**  
Yokohama-shi, Kanagawa 240-0042 (JP)

(30) Priority: **16.06.1998 JP 16786898**

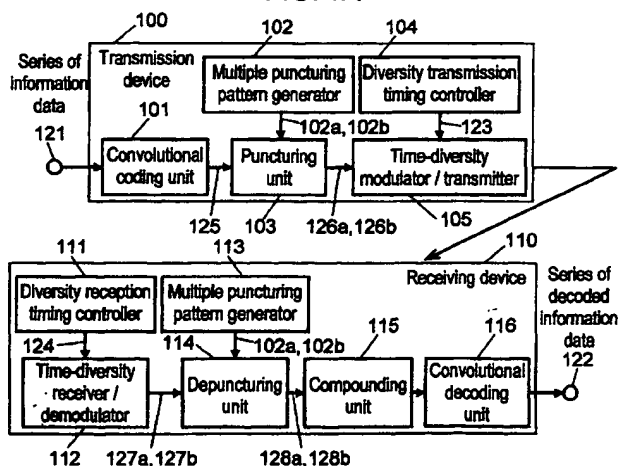
(71) Applicant: **Matsushita Electric Industrial Co., Ltd.**  
Kadoma-shi, Osaka 571-8501 (JP)

(74) Representative: **Grünecker, Kinkeldey,  
Stockmair & Schwanhäusser Anwaltssozietät**  
Maximilianstrasse 58  
80538 München (DE)

(54) **Method and system for transmission and reception of punctured convolutionally encoded data**

(57) The present invention improves quality of communication in a transmission and reception system, a transmission and reception device, and a method of transmission and reception, which utilize primarily a combination of punctured-convolution-coding and diversity. Degradation in likelihood of certain data is prevented by adopting the steps of (a) punctured-convolution-coding an identical information data 121 by using a

plurality of different puncturing patterns 102a and 102b, (b) diversity-transmitting each of different series of punctured data obtained in step (a) as diversity branches, (c) depuncturing the series of punctured data individually in a receiving device 110 by using identical puncturing patterns 102a and 102b as used in the transmission side, and (d) compounding and convolution-decoding them thereafter.

**FIG. 1A****EP 0 966 124 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 99 11 1667

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	<p>KALLEL 5: "COMPLEMENTARY PUNCTURED CONVOLUTIONAL (CPC) CODES AND THEIR APPLICATIONS"</p> <p>IEEE TRANSACTIONS ON COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 43, no. 6, 1 June 1995 (1995-06-01), pages 2005-2009, XP000510831</p> <p>ISSN: 0090-6778</p> <p>* abstract *</p> <p>* II. Complementary Punctured Convolutional (CPC) Codes. *</p> <p>* IV. Conclusions. *</p> <p>-----</p>	1-22	<p>H04L1/00</p> <p>H04L1/06</p> <p>H04L1/04</p> <p>H04B7/02</p>
			<p>TECHNICAL FIELDS SEARCHED (Int.Cl.6)</p> <p>H04L</p> <p>H04B</p>
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
BERLIN		20 March 2002	Martínez Martínez, V
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.02 (P04C01)